● 6HP Eurorack Module ● Built & designed in E.U. ● www.shakmat.com

Shakmat Jeweler Cast Building Guide

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1. Preamble

Thank you for purchasing a Shakmat DIY kit !

We spare no effort in our kit packing process to prevent any mistakes or missing parts. In this document as well, we do our best to describe the assembly process in the most practical and comprehensive way. If by any chance there is a missing/damaged part in your kit or if you have any suggestion, feel free to contact us via shakmat.com.

The assembly process will be dramatically simplified if you follow the order defined by this building guide. We tested various orders of steps before finding the most convenient, and the one presented here is the best!

2. Component list & necessary tools

Paper bag

1x 1x7 pin male header
1x 1x7 pin female header
1x 1x10 pin male header
1x 1x10 pin female header
1x 2x5 pin power header
2x Slide switches
2x Metal potentiometers
2x Metal potentiometer nuts
2x Long Plastic potentiometers
8x Jack connectors
8x Jack connectors nuts
2 x M3 Screws

Pink anti-static wrap

2x PCB
1x Front Panel

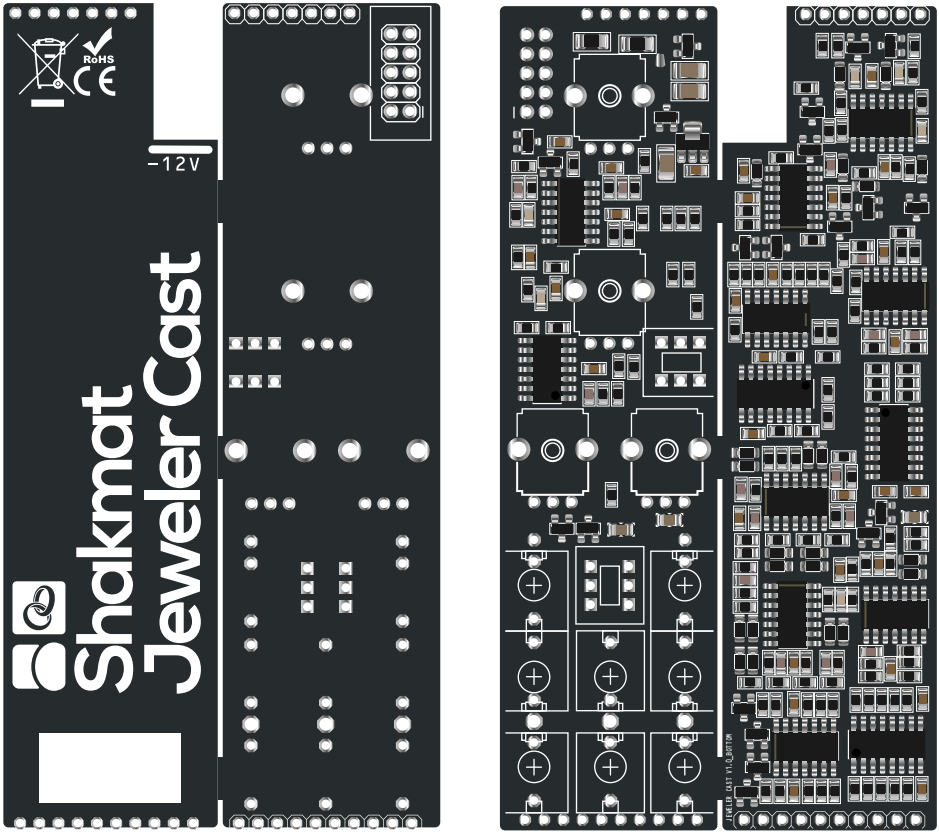
Loose parts

2x Black rubber knobs
1x Power cable
1x User manual

Necessay tools

Metal file
Soldering iron
Solder
Cutting pliers

3. PCB details

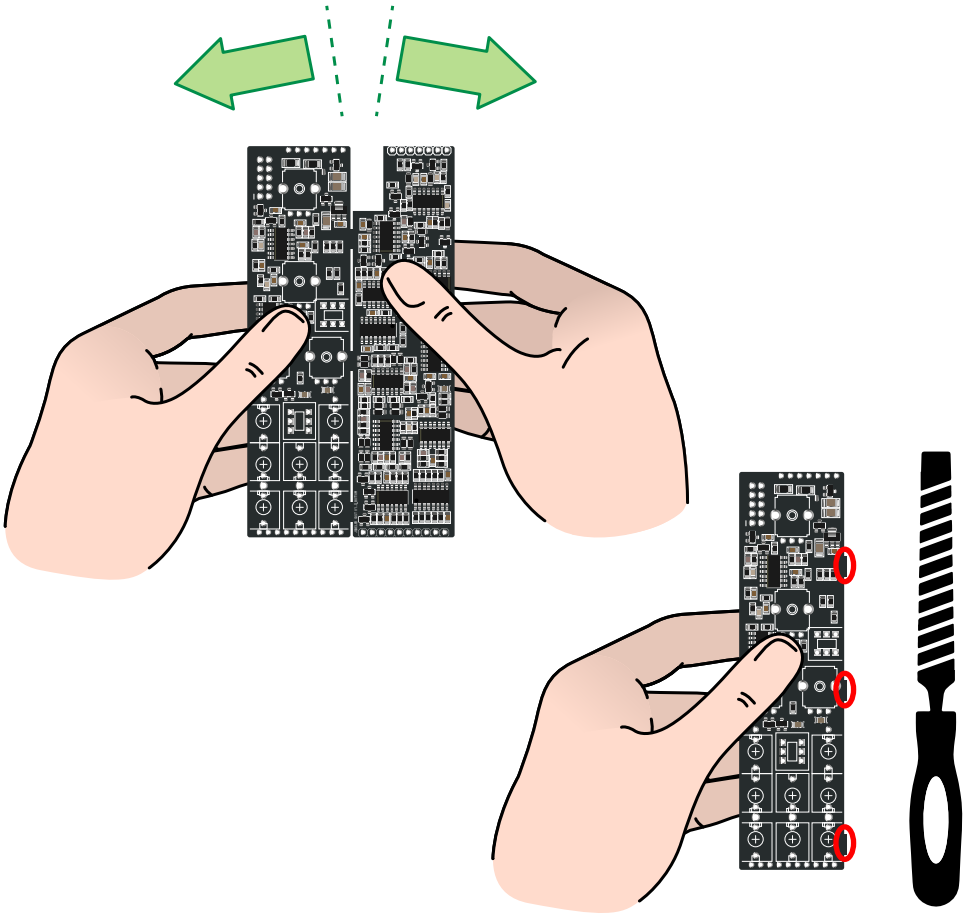


PCB
Back & front

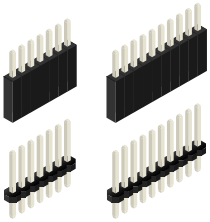
4. PCB’s separation

The first step of this build is to separate the two PCB’s by breaking them apart. For this, hold them firmly like shown on the below illustration and push from behind (on the side where there is no soldered components).

Once separated, there will be residues of the tabs that used to join the two PCB. We recommand to file down those residues in order to have a clean edge on booth PCBs. This step will prevent the assembled module to mess with adjacent modules in your rack.



5. Assembly

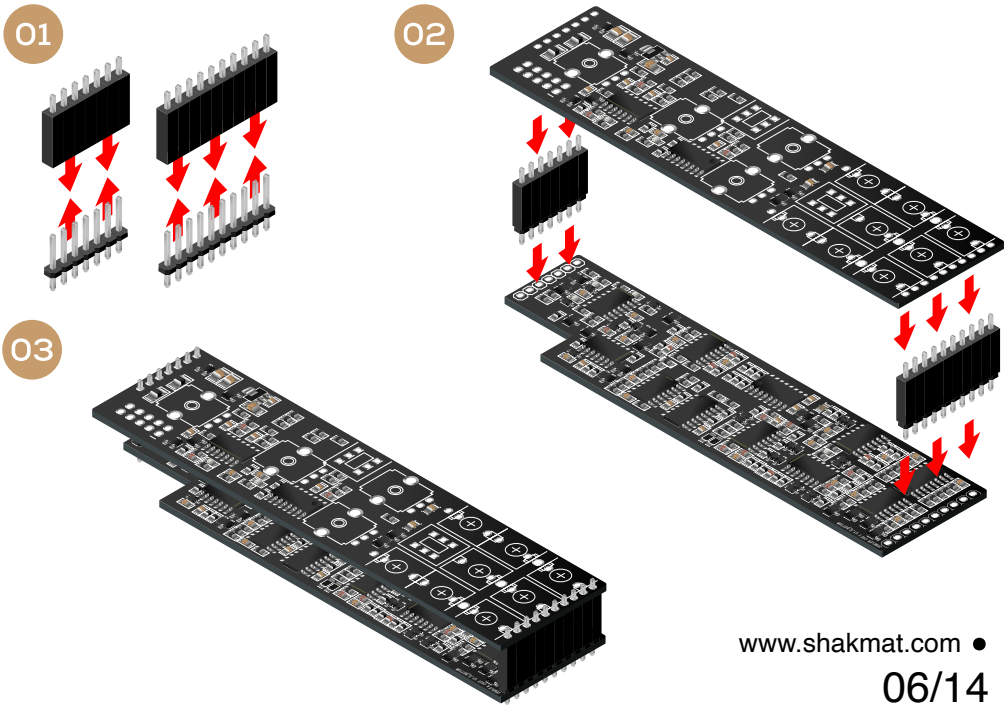


5.1 Headers (1x7 pin & 1x10 pin)

We begin by joinning the two PCBs together. Be careful during this step, if you solder every pin and the PCBs arn't well aligned, you will likely not be able to correct it. To stack the two PCBs together, headers are used.
There is one pairs of 7 pin male & female headers and one 10 pin pair.

First assemble all the headers with their mate. Then place the male part on the bottom PCB and the female part through the top PCB. Then assemble the two boards toghether and proceed to the soldering.

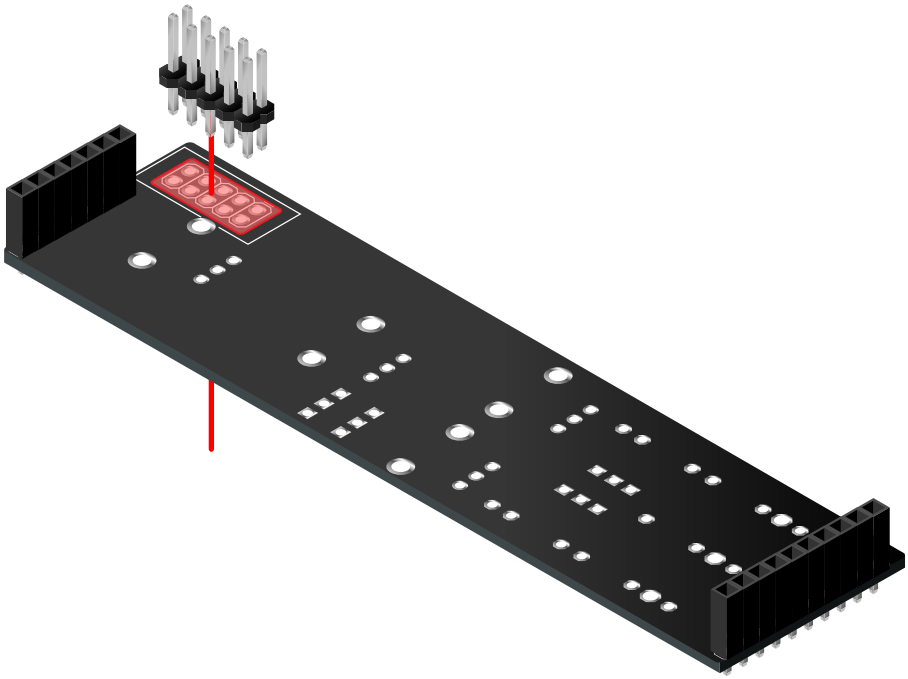
You will first solder only one pin of each header. It is important that you firmly hold the two PCBs against each other while soldering. There must be no gap between the PCBs and the header's black plastic part. Once you've soldered the first point of each header and check the alignment, you can move on and carefuly solder the remaining points.



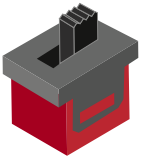
5.2 Power Header (2x5pin)

Separate the two PCBs and flip the top PCB around. Place the power header, short pin side in the holes. Solder only one pin. If your power header is perfectly flat against the PCB, you can proceed with the relmaining points.

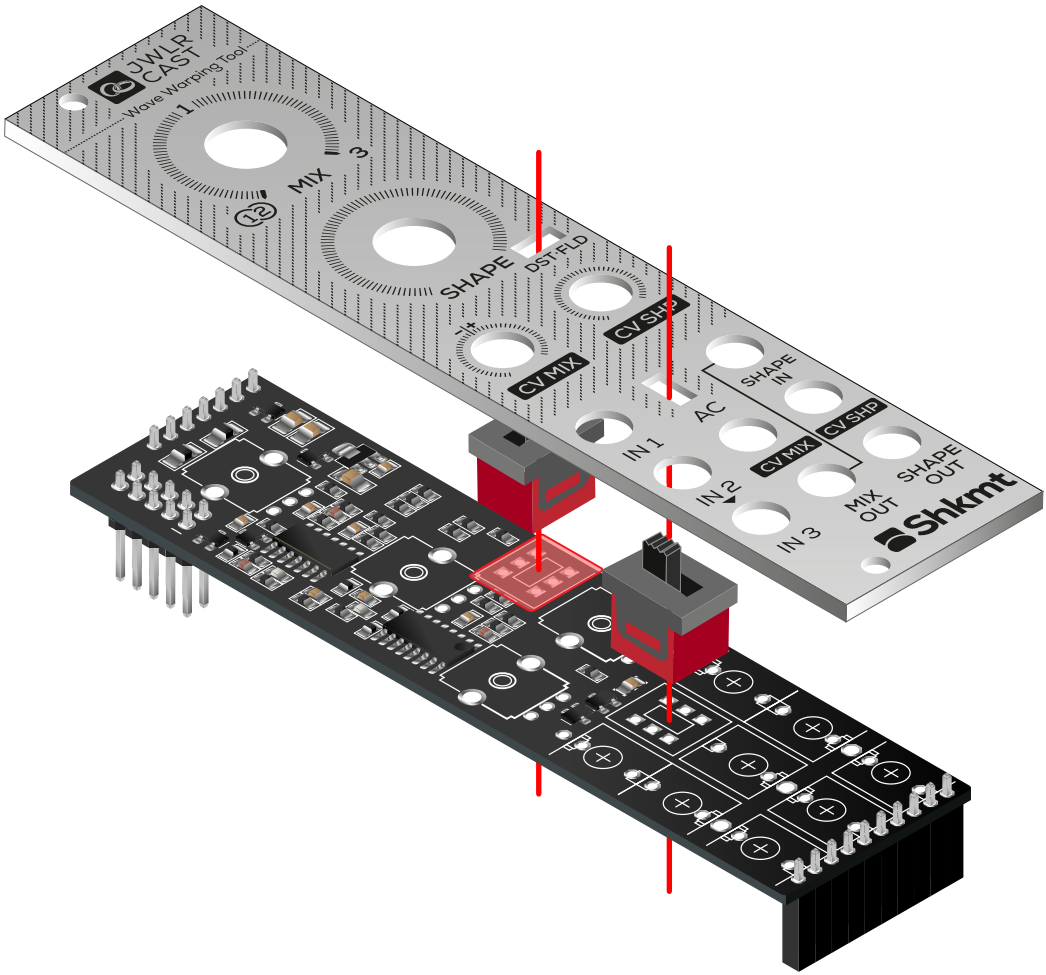
If you need to correct the alignment, reheat the soldered point and simultaneously press the plastic part of the header against the PCB until it's flat. Pull off the soldering iron but keep pressing the header and PCB together (use your finger nail to push on the plastic part). Avoid touching the pins themselves because they will become hot very quickly and move out of alignment within their plastic bracket. Once you are satisfied with you placement, solder the remaining points.



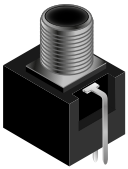
5.3 Slide switches (x2)



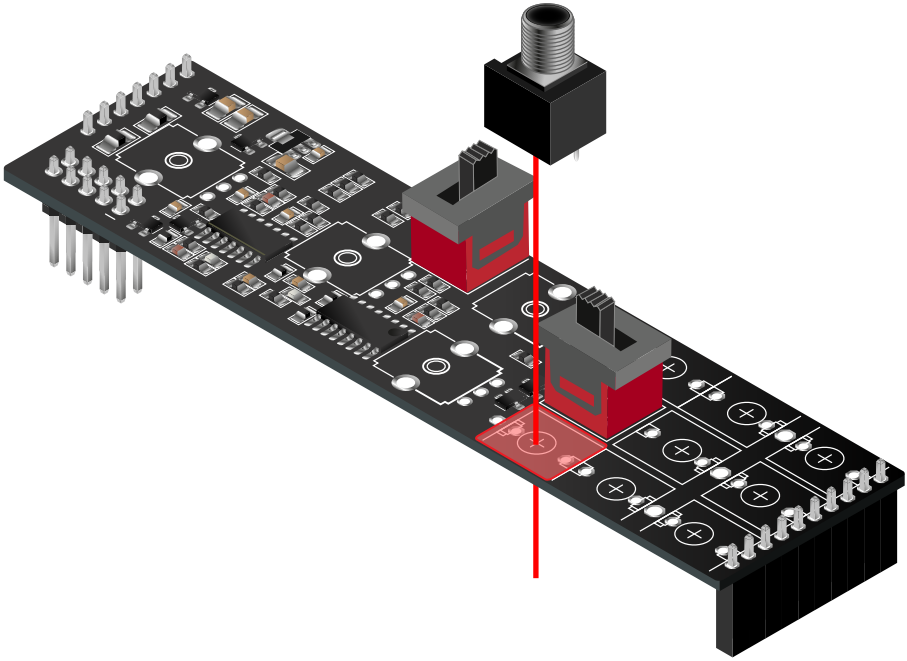
Flip the top PCB around. Place the two slide switches and solder one pin of each switch. Check their position with the front panel. If they are well aligned and flat against the PCB, you can proceed with the relmaining points. If you need to correct the alignment, reheat the soldered point. Once you are satisfied with you placement, solder the remaining points.



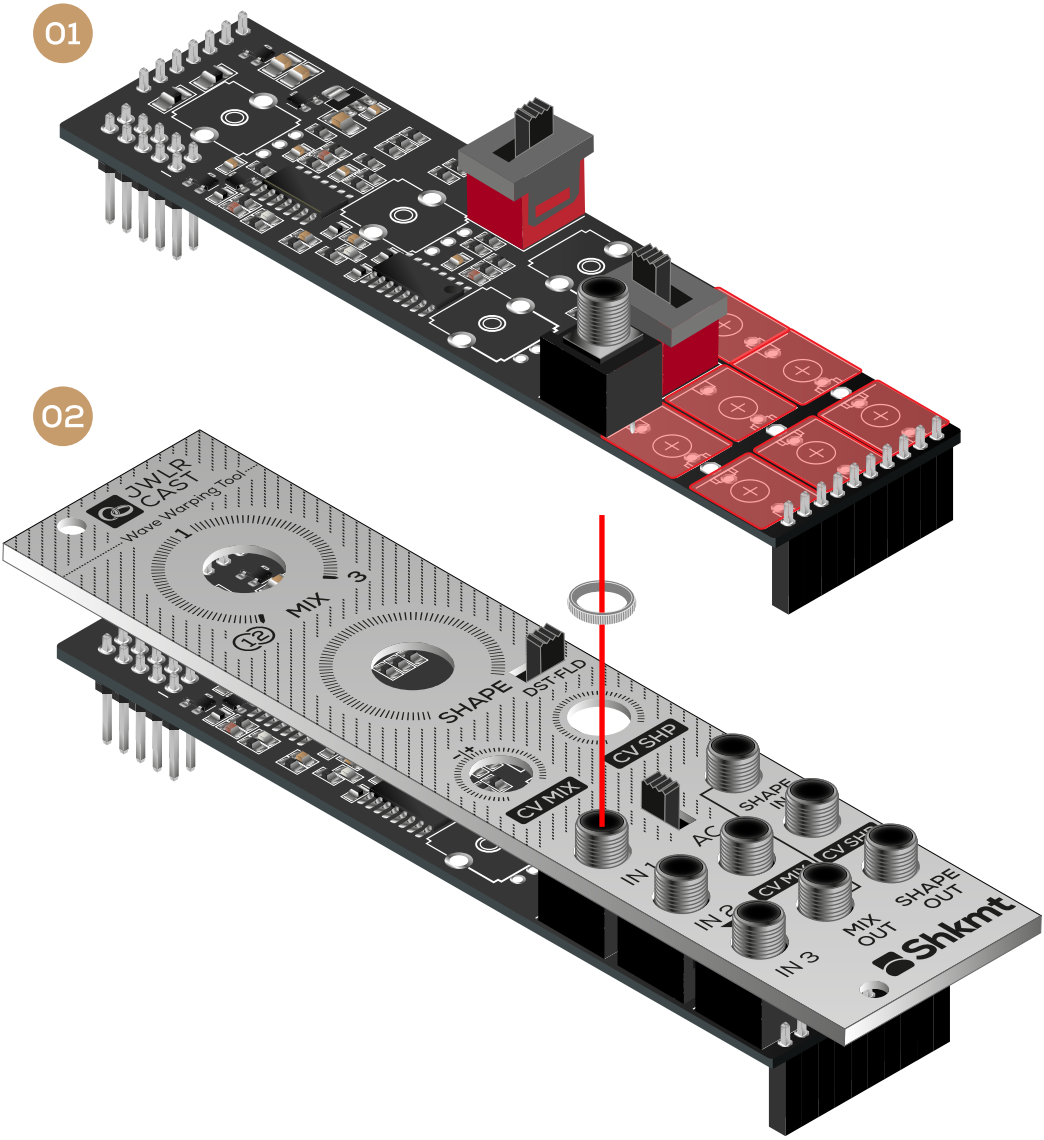
5.4 Jack connectors (x8)



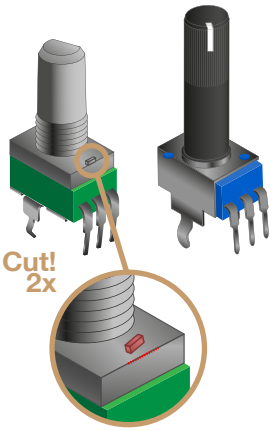
To ensure perfect alignment of all the jack connectors, start by soldering the top-left one. Be sure to lay them completely flat & perpendicular with the PCB.



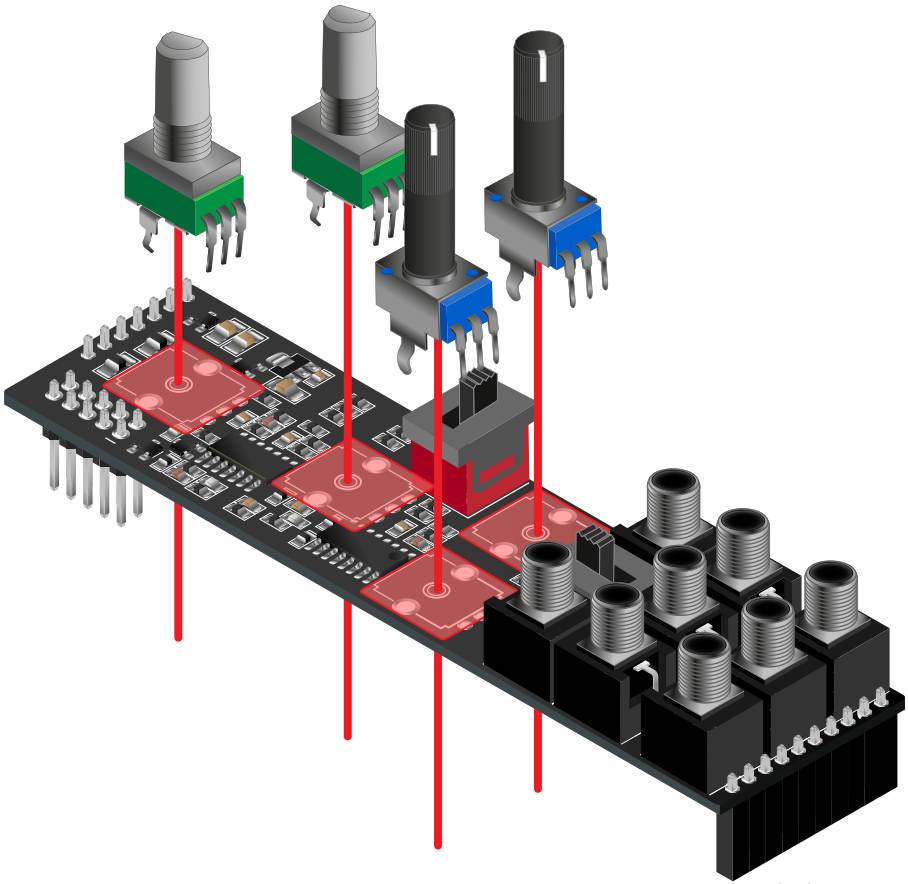
Once the first jack is soldered in place, place the seven remaining ones, mount the front panel temporarily with a nut on the soldered jack, and solder every remaining points. This technique will ensure that every jack is correctly seated.



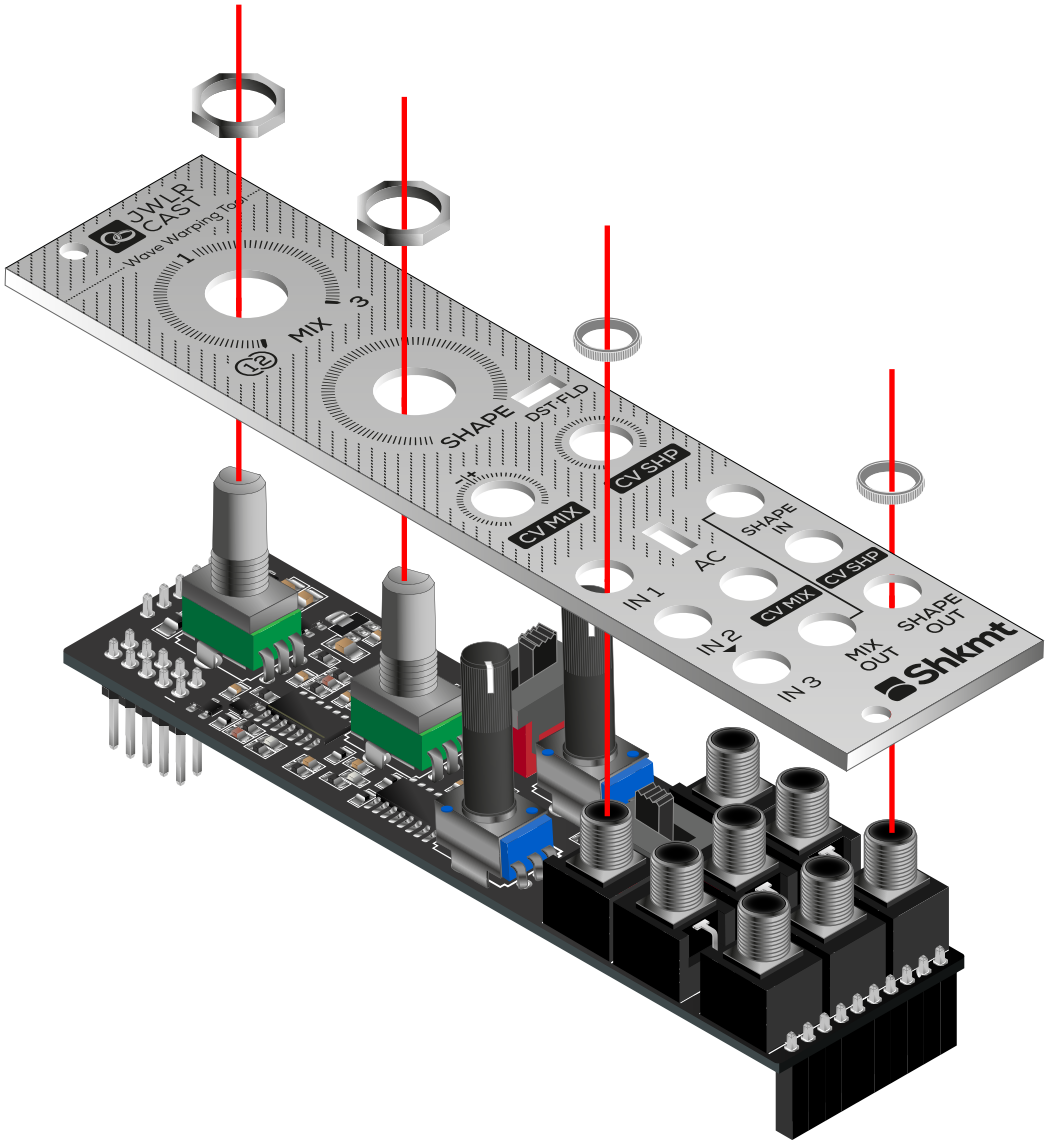
5.5 Potentiometers (x4)



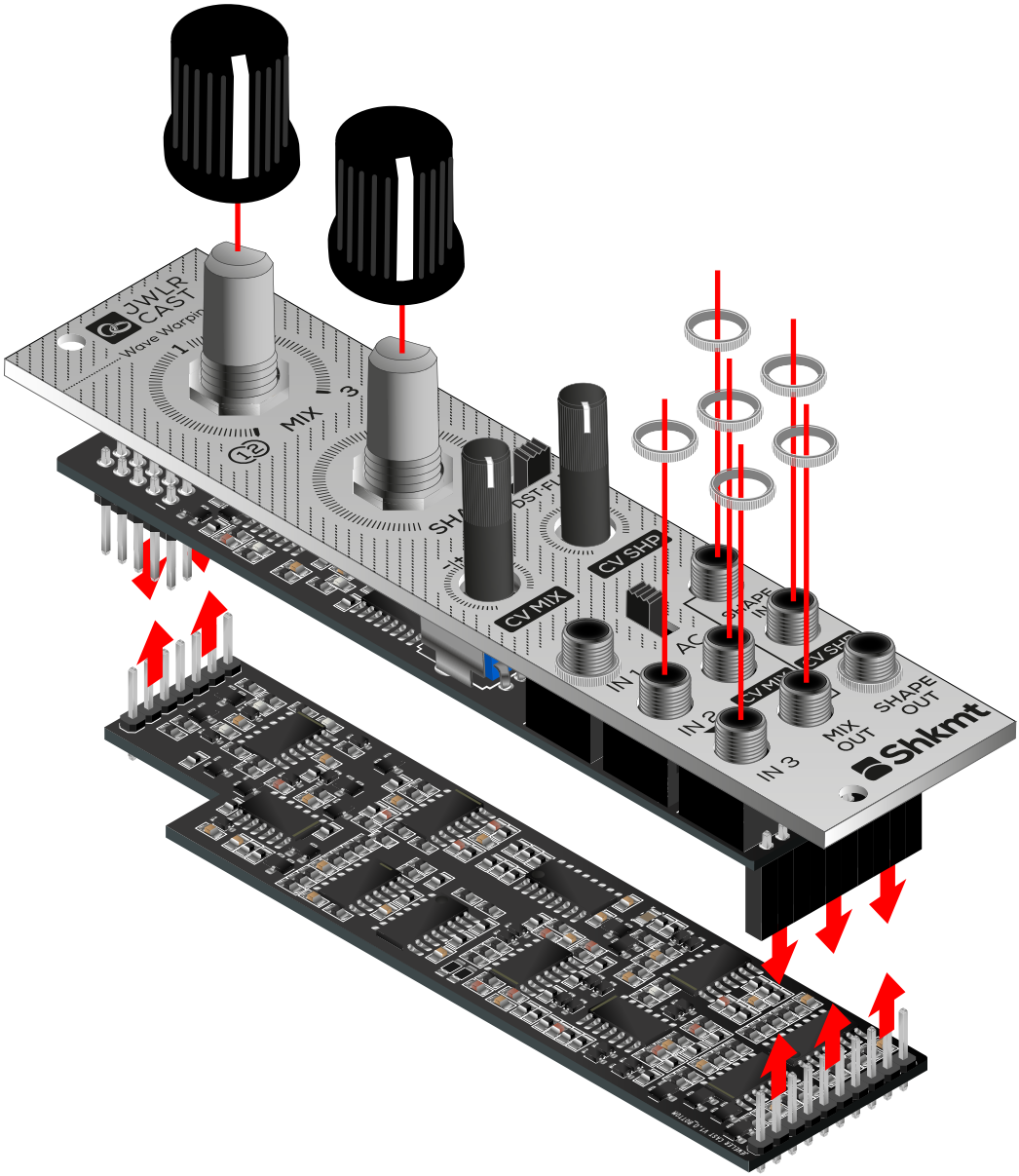
Before soldering, you have to cut a little metal piece off the top of the two metal potentiometer (as shown here to the right). This little piece prevents the front panel from sitting properly. Use some small & sharp cutting pliers for this task. You can then Push all four potentiometers in place.



Once all the potentiometers are in place, mount the front panel with four nuts and solder everything.



5.6 Knobs & nuts



6. Test

First, send two audio source into in 1 and in 2, check the mix out while turning the mix pot

Test the Mix CV input with a simple LFO

Send a signal into shape, turn shape input, try with a lfo into shape cv input

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